

Claims

1. Sliding door (10) with a door leaf; with a frame (12); with a guide (16, 18) for the door leaf (14), which can be moved in the guide (16, 18) between an open position and a closed position; and with stiffening means for stiffening at least certain areas of the frame (12) when the door leaf is in the closed position, where the frame (12) covers at least certain parts of the edge area of the first and/or second side (44, 48) of the door leaf (14) when the leaf is in the closed position,

characterized in that

the door leaf (14) has engaging means (34) and the frame (12) has receiving means (122), which engage with each other essentially only in the closed position and thus generate a force (F_2) acting transversely to the sliding direction, which stiffens the associated area of the frame (12).

2. Sliding door according to Claim 1, characterized in that the engaging means (34) has at least one bevel (124) and the receiving means at least one associated bevel (122), where, as a result of the engagement between these bevels (122, 124), a force (F_1' , F_1) acting on the door leaf (14) transversely to the sliding direction generates the transverse reaction force (F_2) required to stiffen the frame (12).

3. Sliding door according to Claim 1 or Claim 2, characterized in that a locking device (42, 52, 54, 56, 58) generates the force (F_1' , F_1) acting on the door leaf (14).

4. Sliding door according to Claim 3, characterized in that the force (F_1' , F_1) acting on the door leaf (14) is effective only in the locked state, i.e., the state in which the locking device (42, 52, 54, 56, 58) is braced against one side (12a) of the frame (12) and presses the door leaf (14) against stop means (92) on the other side (12b) of the frame (12).

5. Sliding door according to Claim 4, characterized in that, although the two sides (12a, 12b) of the frame (12) are pushed apart by the force (F_1' , F_1) generated by the locking device (42, 52, 54, 56, 58) when the door leaf is locked, the engaging means (34) of the door leaf (14) and the receiving means (122) of the frame (12) hold the frame together, as a result of which a transverse reactive force (F_2) acts on the frame and the leaf.

6. Sliding door according to one of the preceding claims, characterized in that the engaging means (34) are located on the rear edge (36) of the door leaf (14), i.e., the edge which trails as the door leaf (14) is being moved from the open position to the closed position.

7. Sliding door according to one of the preceding claims, characterized in that the receiving means of the frame (12) are arranged adjacent to each other on the two opposing inside surfaces of the frame (12).

8. Sliding door according to Claim 7, characterized in that the engaging means of the door leaf (14) cooperating with the two receiving means of the frame (12) is designed as a claw (34).

9. Sliding door according to Claim 8, characterized in that, next to the first support formed by the bevels (122, 124), the claw (34) has a second support, formed by at least one roller (110), which rests against an inside surface of the frame (12).

10. Sliding door according to Claim 8 or Claim 9, characterized in that the claw (34) is connected to the rear edge (36) of the door leaf (14) by a strap (114), where the strap (114) is supported so that it is free to move relative to the claw (34) in a direction perpendicular to the sliding direction of the door leaf (14).

11. Sliding door according to Claim 10, characterized in that the roller (118) is supported in the end of the claw facing away from the door leaf (14).

12. Sliding door according to one of Claims 7-11, characterized in that the receiving means of the frame (12) and the engaging means (34) of the door leaf (14) are designed symmetrically with respect to the plane in which the door leaf (14) slides.

13. Sliding door according to one of the preceding claims, characterized in that the frame (12) has a first and a second longitudinal frame part, where, when the door leaf (14) is being moved from the open position to the closed position and vice versa, the door leaf (14) is pushed through the first longitudinal frame part, so that the forward edge (28) of the door leaf (14) comes to rest against the second frame part when the door leaf (14) is in the closed position.

14. Sliding door according to Claim 13, characterized in that the receiving means (122) of the frame (12) are arranged in the first longitudinal frame part, whereas the engaging means (34) of the door leaf are arranged only on the rear edge (36) of the door leaf (14), so that the stiffening in the closed position affects only the first longitudinal frame part.

15. Sliding door according to one of the preceding claims, characterized in that the frame (12) is produced out of sheet metal, for example, by a light-weight construction method.